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POSTER ABSTRACTS

156. Laboratory-Confirmed Human Coronavirus Infections Among Children: Does Type Matter?

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Background. Human coronaviruses (HCoV) cause illness ranging from the common cold to life-threatening pneumonia. However, the reported clinical epidemiology and burden of HCoV infection is confounded by frequent codetection with other respiratory viruses. Although different types of HCoV can be detected by laboratory testing, few data exist describing single HCoV infection by type in children.

Methods. We conducted a retrospective cohort study of children <18 years with single HCoV detection from December 2012 to February 2016 at Primary Children's Hospital (PCH), Salt Lake City, UT. Demographic, clinical, and financial data of children with moderate to severe single HCoV infection (hospitalized ≥24 hours) were evaluated by HCoV type (HKU1, OC43, 229E, NL63). Testing was performed using the FilmArray Respiratory panel (BioFire Diagnostics, LLC, Salt Lake City, UT).

Results. Over the study period, a respiratory virus was detected in 11 714 of 19 150 (61%) children undergoing respiratory viral testing at PCH, with HCoV accounting for 1267 (11%) of detected viruses. Of these, single HCoV infection occurred in 534 children (42% of HCoV detections) comprising the study cohort; 207 (39%) were hospitalized ≥24 hours. The overall median age was 14 months (interquartile range [IQR], 3–46). A chronic medical condition was present in 62 (30%) children, with 69 (33%) requiring intensive care unit (ICU) admission and 28 (14%) requiring mechanical ventilation. The median length of stay (LOS) was 2.5 days (IQR, 1.5–4.7), and hospital cost was $6502 (IQR, $3708–$14 280) (table). Chronic medical conditions were noted more frequently in children with HCoV NL63 (32; 43%) compared with HCoV OC43 (14; 18%) ($P = 0.008$). Intensive care unit admission, mechanical ventilation, median hospital LOS, and cost were comparable among the different HCoV types. Death from HCoV (3; 1%) was rare among children with moderate to severe single HCoV infection.

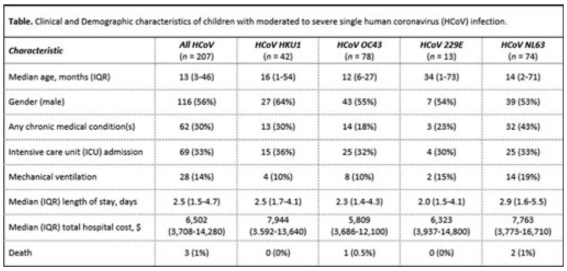

Table. Clinical and Demographic characteristics of children with moderated to severe single human coronavirus (HCoV) infection.

Characteristic	*All HCoV* (*n* = 207)	*HCoV HKU1* (*n* = 42)	*HCoV OC43* (*n* = 78)	*HCoV 229E* (*n* = 13)	*HCoV NL63* (*n* = 74)
Median age, months (IQR)	13 (3-46)	16 (1-54)	12 (6-27)	34 (1-73)	14 (2-71)
Gender (male)	116 (56%)	27 (64%)	43 (55%)	7 (54%)	39 (53%)
Any chronic medical condition(s)	62 (30%)	13 (30%)	14 (18%)	3 (23%)	32 (43%)
Intensive care unit (ICU) admission	69 (33%)	15 (36%)	25 (32%)	4 (30%)	25 (33%)
Mechanical ventilation	28 (14%)	4 (10%)	8 (10%)	2 (15%)	14 (19%)
Median (IQR) length of stay, days	2.5 (1.5-4.7)	2.5 (1.7-4.1)	2.3 (1.4-4.3)	2.0 (1.5-4.1)	2.9 (1.6-5.5)
Median (IQR) total hospital cost, $	6,502 (3,708-14,280)	7,944 (3.592-13,640)	5,809 (3,686-12,100)	6,323 (3,937-14,800)	7,763 (3,773-16,710)
Death	3 (1%)	0 (0%)	1 (0.5%)	0 (0%)	2 (1%)

Conclusion. Human coronavirus infection is a common cause of respiratory illness among children. Among children with single HCoV detection, 35% to 42% of each type required hospitalization for ≥24 hours. Outcomes in children with HCoV infection alone were comparable to each other and associated with a substantial clinical and economic burden for all of the HCoV types.

Disclosures. **A. J. Blaschke**, BioFire Diagnostics, LLC: Advisor regarding risks associated with US Food and Drug Administration-cleared products and Collaborator, Consulting fee and Licensing agreement or royalty; **A. L. Hersh**, Merck: Grant Investigator, Research grant

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